3D CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 602.

MILL CREEK, VA.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORTS ON PRELIMINARY EXAMINATION AND SURVEY OF MILL CREEK, MIDDLESEX COUNTY, VA.

JANUARY 16, 1914.—Referred to the Committee on Rivers and Harbors and ordered to be printed, with illustration.

WAR DEPARTMENT,
Washington, January 14, 1914.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: I have the honor to transmit herewith a letter from the acting Chief of Engineers, United States Army, dated 12th instant, together with copies of reports from Lieut. Col. W. C. Langfitt, Corps of Engineers, dated December 17, 1912, and October 20, 1913, with map on preliminary examination and survey, respectively, of Mill Creek, Middlesex County, Va., made by him in compliance with the provisions of the river and harbor act approved July 25, 1912.

Very respectfully,

LINDLEY M. GARRISON,
Secretary of War.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, January 12, 1914.

From: The Chief of Engineers, U. S. Army.
To: The Secretary of War.
Subject: Preliminary examination and survey of Mill Creek, Va.

1. There are submitted herewith for transmission to Congress reports dated December 17, 1912, and October 20, 1913, with map, by Lieut. Col. W. C. Langfitt, Corps of Engineers, on preliminary examination and survey, respectively, of Mill Creek, Middlesex

County, Va., authorized by the river and harbor act approved Ju 25, 1912.

2. Mill Creek is a tidal estuary entering the Rappahannock Riv 8 miles above its mouth. At the mouth of the creek is Mill Cre wharf, which is used by the steamers of the Maryland, Delaware Virginia Railway Co., and about one-half mile above this wharf is public landing. It was reported that the steamers have difficulty reaching the wharf on low tide and not infrequently run agroun A survey of the locality having been made by the district officer, finds that there is an available channel to Mill Creek wharf havi widths between 10-foot contours and 12-foot contours of 350 and 1 feet, respectively, and that the depths near the outer end of t wharf appear to be sufficient for the purposes of the boats using i In any event, a relatively small extension of the wharf would whol relieve the situation and be much better than to attempt to maintai greater depths than now exist around the head of the wharf. A extension of the channel to the public landing is also desired, but t district officer does not think the resulting benefits would be con mensurate with the cost. He therefore expresses the opinion tha the improvement of Mill Creek is not worthy of being undertaken b the General Government at the present time beyond the establis ment by the Bureau of Lighthouses of a beacon or buoy in the vici ity of the point indicated on the accompanying map. In this opi ion the division engineer concurs.

3. These reports have been referred, as required by law, to th Board of Engineers for Rivers and Harbors, and attention is invite to its accompanying report, dated November 18, 1913, concurring i the views expressed by the district officer and the division enginee

4. After due consideration of the above-mentioned reports, I co cur in general with the views of the district officer, the division eng neer, and the Board of Engineers for Rivers and Harbors, that th improvement by the United States of Mill Creek, Middlesex County Va., is not deemed advisable at the present time.

EDW. BURR,
Colonel, Corps of Engineers,
Acting Chief of Engineers.

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBOR ON SURVEY.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
November 18, 1913.

To the CHIEF OF ENGINEERS, UNITED STATES ARMY:

1. Mill Creek is a tidal estuary entering the Rappahannock Rive about 8 miles above its mouth. The Maryland, Delaware & Vi ginia Railroad Co. have a wharf known as Mill Creek Wharf, locate at the mouth of the creek. About one-half mile above Mill Cree Wharf is a public landing, erroneously referred to in the report o preliminary examination as Fleet's Landing.

2. The principal commerce consists of oysters, fish, wood product and general merchandise, and amounts to about 6,700 tons annually estimated to be worth about $100,000, and there are carried annuall about 1,600 passengers.

3. It was stated by the district officer in the report on preliminary examination that steamers have difficulty in reaching Mill Creek Wharf on low tide, that they are frequently delayed, that a channel 50 feet wide and 12 feet deep, with a turning basin at the head, would serve all demands of navigation, and that he believes the cost of such a channel to Mill Creek Wharf, and possibly to the public landing one-half mile above, would be commensurate with the probable benefits. A survey was therefore recommended.

4. The results of the survey show that there is now available a channel 12 feet deep up to the Mill Creek Wharf, having a minimum width of 160 feet, with the exception of a short distance beyond the end of the wharf, where the depth is slightly less, but still sufficient for the boats using this wharf. The district officer states that in any event a relatively small extension of the wharf would wholly relieve the situation and be much better than to maintain a greater depth around the head of the wharf.

5. It seems that the trouble in this case has arisen largely from a lack of knowledge of the location of the deepest water, and that if this were followed there would be no difficulty in reaching the Mill Creek Wharf. It is stated that the amount of dredging which would be required to carry the channel to the public landing, as suggested in preliminary report, would be excessive in cost when compared to the advantages which would accrue therefrom. In view of the circumstances, the district officer reports the locality unworthy of improvement by the United States beyond the establishment by the Bureau of Lighthouses of a beacon or buoy in the vicinity of the point indicated on the map. In this view the division engineer concurs.

6. Interested parties were advised of the unfavorable tenor of the district officer's report and given an opportunity of submitting their views to the board. A number of communications have been received [1] and given consideration.

7. It would seem from the facts presented that there is at present ample depth leading up to the Mill Creek Wharf, and that to extend this depth to the public landing would require extensive dredging, and probably a considerable sum for annual maintenance. It is believed that the needs of the community can be very fairly served by the Mill Creek Wharf, and that additional extension of the channel farther up the creek would involve expenditures out of reasonable proportion to the probable benefits. The board therefore concurs in the opinion of the district officer and the division engineer that it is not advisable for the United States to undertake any improvement of Mill Creek at this time.

8. In compliance with law, the board reports that there are no questions of terminal facilities, waterpower or other subjects which could be coordinated with the project proposed, in such manner as to render the improvement advisable in the interests of commerce and navigation.

For the board:

FREDERIC V. ABBOT,
Colonel, Corps of Engineers,
Senior Member Present.

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[1] Not printed.

PRELIMINARY EXAMINATION OF MILL CREEK, VA.

UNITED STATES ENGINEER OFFICE,
Washington, D. C., December 17, 1912.

From: Lieut. Col. W. C. Langfitt, Corps of Engineers.
To: The Chief of Engineers (through the division engineer).
Subject: Report on preliminary examination of Mill Creek, Va.

1. Complying with letter, Office of the Chief of Engineers, dated August 3, 1912, the following report on the preliminary examination of Mill Creek, Middlesex County, Va., required under act of Congress approved July 25, 1912, is submitted:

2. Mill Creek is a tidal estuary entering the Rappahannock River from the right bank, 8 miles above its mouth. Mill Creek Wharf is located at the mouth of Mill Creek. A public landing known as Fleets Landing is about one-half mile above Mill Creek Wharf.

3. The approach to the creek is said to be obstructed by a lump or shoal having about 8 or 9 feet of water over it, insufficient for the steamers using the wharf. Excepting this lump a full 10-foot depth can be carried to Mill Creek Wharf. From Mill Creek Wharf to Fleets Landing the ruling depth is 8 feet, and from Fleets Landing to Woodland Wharf, about three-fifths of a mile distant, the ruling depth is 6 feet. The mean range of tide is 1.3 feet. There are no fluvial characteristics.

TERMINAL AND TRANSFER FACILITIES.

4. Mill Creek Wharf, at the mouth of Mill Creek, is 3 miles from North End Wharf, Rappahannock River; 5½ miles from Ruarks Wharf, on Piankatank River; 3 miles from Conrads Wharf, Piankatank River; and is 1 mile from the mouth of Locklies Creek, Va. The wharves are privately owned and serve for the shipments of freight and passengers in the vicinity. Generally speaking, they are open-pile structures with T heads. The handling of freight over these wharves is done by hand and seems to be sufficient for the locality. The nearest railroad is at West Point, Va., 40 miles distant by road and 70 miles by water. The trade is with Baltimore, Md. The steamers of the Maryland, Delaware & Virginia Railroad Co., plying between Baltimore and points on the Rappahannock River, give Mill Creek Wharf daily service each way. The tributary area served, including Locklies Creek, is about 18 square miles and contains about 2,500 inhabitants. Terminal, water-power, reclamation, and other kindred problems are not involved in the proposed improvement.

5. Mill Creek has not been improved by the Government or private interests, and this is the initial preliminary examination.

6. A public hearing was held at Mill Creek Wharf on September 14, 1912, to afford an opportunity to interested parties to express their views and to ascertain the improvement desired. About 56 persons attended the hearing. Most of those present had something favorable to say about the improvement, and they were requested to submit statements, statistics, etc., in writing. To date one communication has been received, and, as stated therein, the improvement desired is a channel between deep water in the Rappahannock River and Fleets Landing 11 feet deep and sufficiently wide to accommodate the present steamer traffic. The principal articles of commerce are

ysters, fish, wood products, and general merchandise. The receipts nd shipments amount to about 6,700 tons annually and are estimated be worth about $100,000. About 1,635 passengers are carried nnually.

7. Steamers have great difficulty in reaching the Mill Creek Wharf n low tide, and not infrequently run aground and are delayed ours, sometimes days, in getting off the shoal. A copy of letter porting recent grounding of steamer is herewith.[1] The proposed nprovement would obviate all the danger and delay caused by the hoal, would permit the steamers to reach the wharf at all stages of he tide, and would give the locality a certain and uninterrupted eamer service. It is believed that a channel 150 feet wide and 12 et deep, provided with a turning basin at the head, would serve l demands of navigation, and that the cost of making such channel Mill Creek Wharf, and possibly to Fleets Landing, would be com-ensurate with the benefits to be derived therefrom.

8. Improvement of Mill Creek, Middlesex County, Va., is in my pinion worthy of further consideration and investigation, and ccordingly I recommend that a survey be authorized to determine he cost of a suitable improvement and the relation of such cost to enefits to be derived therefrom.

Sketch map of the locality accompanies this report.[1]

W. C. LANGFITT.

[First indorsement.]

UNITED STATES ENGINEER OFFICE,
New York City, December 26, 1912.

o the CHIEF OF ENGINEERS, UNITED STATES ARMY:

1. Forwarded.

2. As the advisability of the General Government making this nprovement is largely dependent upon the cost, I concur with the istrict officer in recommending a survey to determine such cost.

WM. T. ROSSELL,
Colonel, Corps of Engineers,
Division Engineer, Eastern Division.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
January 20, 1913.

o the CHIEF OF ENGINEERS, UNITED STATES ARMY:

For reasons stated herein, the board concurs with the district fficer and the division engineer in recommending a survey in order determine the extent and advisability of the improvement.

For the board:

WM. T. ROSSELL,
Colonel, Corps of Engineers,
Senior Member of the Board.

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[1] Not printed.

SURVEY OF MILL CREEK, VA.

UNITED STATES ENGINEER OFFICE,
Washington, D. C., October 20, 1913.

From: The district engineer officer.
To: The Chief of Engineers United States Army (through the div
sion engineer).
Subject: Survey of Mill Creek, Va.

1. In compliance with instructions from the Office of the Chief o Engineers, dated January 24, 1913, a survey in the vicinity of Mi Creek has been made. Report on the preliminary examination of thi locality, authorized by river and harbor act of July 25, 1912, wa submitted under date of December 17, 1912, to which reference i made for a description of the locality and present conditions.

2. Results of the survey are shown on the map herewith.

3. In the preliminary examination report above referred to it wa stated:

> Steamers have great difficulty in reaching the Mill Creek Wharf on low tide an not infrequently run aground and are delayed hours, sometimes days, in getting o the shoal. * * * The proposed improvement would obviate all the danger an delay caused by the shoal, would permit the steamers to reach the wharf at all stage of the tide, and would give the locality a certain and uninterrupted steamer service It is believed that a channel 150 feet wide and 12 feet deep, provided with a turnin basin at the head, would serve all demands of navigation, and that the cost of makin such channel to Mill Creek Wharf, and possibly to Fleets Landing, would be com mensurate with the benefits to be derived therefrom.

4. The results of the survey show that there is an available channe to Mill Creek Wharf with available widths between 10-foot contour and 12-foot contours of 350 feet and 160 feet, respectively, and tha the depths near the outer end of the wharf appear to be sufficient fo the purposes of the boats using it. In any event a relatively smal extension of the wharf would wholly relieve the situation and be muc better than to attempt to maintain deeper depths than now exis around the head of the wharf. There would appear to be no objectio to issuance of a permit by the Secretary of War for such an extension

5. Paragraph 7, above quoted, was based upon reports from th steamers using Mill Creek Wharf, and it is believed that their troubl has arisen largely from their not knowing the limits of the deepe channel leading to the wharf. It is further believed that practicall all the difficulties of navigation to this wharf would be obviated if a beacon or buoy were placed on the point of the shoal opposite th existing beacon and as indicated on the map accompanying.

6. The amount of dredging which would be required to carry th channel to public landing, as suggested in preliminary report, an there called Fleets Landing, would be excessive in cost when com- pared to the advantages which would accrue therefrom.

7. No additional facts were obtained during the survey bearing upon the project beyond the survey itself.

8. In view of the above state of affairs I am constrained to report that, in my opinion, improvement of Mill Creek, Middlesex County, Va., is not worthy of being undertaken by the General Government at the present time beyond the establishment by the Bureau of Light- houses of a beacon or buoy in the vicinity of the point indicated on the inclosed map.

W. C. LANGFITT,
Lieutenant Colonel, Corps of Engineers.

[First indorsement.]

OFFICE OF DIVISION ENGINEER, EASTERN DIVISION,
New York City, October 25, 1913.

To the CHIEF OF ENGINEERS:

Concurring in the views and recommendation of the district officer.

W. M. BLACK,
Colonel, Corps of Engineers.

[For report of the Board of Engineers and Harbors on survey see 2.]

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ANCHORAGES.

26. As was stated in the report on preliminary examination, the chorages in general use in this harbor are as follows: Hampton ads, James River opposite Newport News, the west side of the annel opposite Lamberts Point, the east side of the channel be-een Lamberts Point and Fort Norfolk, and for canal boats and all barges, the sides of the channel nearer the center of the harbor.
27. The anchorage area in Hampton Roads is very deep and is ple for vessels of all classes and there is no need of dredging to ovide additional anchorage area there. The same is true of the a in the James River opposite Newport News.
28. The anchorages along the Norfolk Channel are, however, re-icted in area and are frequently congested, crowding vessels out close to the channel as to endanger passing vessels, and as a ult several collisions have occurred. Additional anchorage space required, and for economy there is no doubt that this should, if pos-le, be made by providing anchorages of different depths for dif-ent classes of vessels.
29. Across the channel northwestward from Lamberts Point ere is an old and natural bend in the channel having a natural v-water depth approximating 33 feet. The present Norfolk Har-r Channel is dredged in a straight line farther to the eastward, and tween the two channels there has been left an area that now has a pth of about 30 feet.
30. There is required in this vicinity an anchorage for large ves-s, frequently loaded to a draft of 33 feet or more, which have eady finished taking coal either for cargo or for bunker use, and awaiting an opportunity to sail. These vessels now anchor in e older deep channel, but in order to make this anchorage safer d more available it is essential that the shallow area between the l and the new channels be dredged to the full depth of 35 feet at an low water, and that the older channel be also deepened to the ne depth and that the western limits of this anchorage be straight-ed out to fairly regular lines, which can be marked by buoys or herwise. There can be provided in this way a deep-water an-orage having an area of about 64 acres. It will require the re-oval of about 550,000 cubic yards of material, at an estimated cost, cluding supervision and contingencies, of $99,000. The lower end this anchorage just south of the Craney Island Light will, with e channel itself, serve as a wide basin in which the largest vessels ay be turned around.
31. Southward of the anchorage just mentioned and extending arly as far as the Western Branch Channel there is now available the west of the deep channel an anchorage with an area of about acres, all having a low-water depth of 24 feet or more, and of this ea about 25 acres have now a low-water depth of 30 feet. This chorage and the deep-draft one above described are sufficient, it is lieved, if proper use be made of them, to supply the present anchor-e needs of large vessels.
32. There is still, however, another class of vessels frequenting Nor-k Harbor and for which anchorages are not provided in the areas entioned above without interfering with the larger vessels. This ass includes the small barges and canal boats bound to or coming m the waterways to the southward. At present these vessels are

towed through the canals in comparatively small tows and in Norfolk Harbor are made up into larger tows for transportation northward. While lying in Norfolk Harbor they are now anchored along the sides of the channel inward from the mouth of the Western Branch. The number of vessels of this character entering the harbor is rapidly increasing and it is imperative that some additional steps be provided for the anchorage of these vessels.

33. The most available place for anchoring these vessels is the area westward of the main channel and between the Western Branch Channel and Pinners Point. Some of this area has now a low-water depth exceeding 12 feet, which is the proposed standard depth of the canal and to straighten out the boundaries of this anchorage so as to include a total area of about 45 acres will require the removal of about 175,000 cubic yards of material at an estimated cost, including supervision and contingencies, of about $35,000.

USE OF ANCHORAGES.

34. In connection with the subject of anchorages for Norfolk Harbor, or rather for Hampton Roads and its tributaries, there is one subject that is perhaps of greater importance even than the provision of additional anchorage areas, and that is the proper control over such anchorages as exist. Such control it does not at present seem possible to exercise under existing laws.

35. An attempt at such control is now made by certain State officials as far as the anchorages near Lamberts Point and in the upper part of Norfolk Harbor are concerned; but this control is not efficient, and there is a constant tendency of the shallower vessels to anchor in deeper water than is necessary, thus crowding the deeper anchorages, which should properly be kept for the deep-draft vessels. In fact the present control is so poor that it is not infrequent for vessels to so anchor that under different conditions of wind and tide they drift out into and block up a portion of the main channel, thus endangering themselves and the passing vessels.

36. The only law known to me which seems to apply to anchorages in Norfolk Harbor is section 15 of the river and harbor act approved March 3, 1899, which provides that—

> It shall not be lawful to tie up or anchor vessels or other craft in navigable channels in such a manner as to prevent or obstruct the passage of other vessels or craft.

37. Whenever vessels anchor, it must be in navigable water or they themselves would not be there, and wherever they anchor they must necessarily be to some extent in the way of vessels which may desire to navigate the same area. Consequently a literal interpretation of the act just quoted would prohibit any anchorages at all.

38. It is, however, absolutely necessary at times that vessels anchor, and unless some designated area can by proper authority be set aside as anchorage grounds the selection of the place of anchorage must rest in the discretion of the master or pilot of the vessel.

39. It is, therefore, believed to be very important that a law should be passed applicable to Hampton Roads and its tributaries which would authorize some official of the United States to designate certain localities as anchorage grounds, and to allot certain of these anchorage grounds to vessels of one class and others to vessels of other classes. This law should also make it unlawful for vessels, except in emergencies, to anchor elsewhere than in these designated

ces, and should, furthermore, close such anchorage grounds to the ssage of all vessels not going there for purposes connected with e anchorage or vessels there anchored.

40. It is understood that such a provision formed part of the last er and harbor bill during some stage of its progress through Con- ess. It was, however, not included in the draft of the law as it ally passed, and the enactment of such a law at an early date is gently recommended.

MOORING BUOYS.

41. As has been stated, the anchorages in the immediate vicinity the Norfolk Channel proper are now frequently congested and I ve recommended provisions for the enlargement of these anchorages.

42. The Norfolk Harbor Channel is a tidal stream, the current wing in different directions at different times, and, consequently, ssels anchoring as at present from the bow only, swing with the le, sometimes extending upstream and sometimes downstream, ile during the periods of slack water they swing out under the fluence of the existing wind. A vessel anchoring in this manner quires a considerable area to swing, thus limiting the number of ssels which can anchor in a specified anchorage area. If, however, rangements were made by which vessels could be moored from th ends to mooring buoys previously placed, this swinging with e tide would be obviated and the number of vessels which could taken care of in the anchorages would be much increased.

43. The need of such mooring buoys in Norfolk Harbor is very ident, but the maintenance or control of the same by the United ates would be expensive and difficult. Such buoys it is believed ould more properly be provided either by the community or by e special interests affected, and it is believed that the cost of pro- ding these is not too great a burden to place upon the community, the way of cooperation in the cost of improving the harbor. It is, erefore, recommended, that any appropriations that may be made r the anchorages recommended above be upon the condition that e locality, or the interests affected, shall provide and maintain in . of the anchorages such mooring buoys or other facilities for choring vessels as the Secretary of War may consider just and oper.

DISPOSAL OF DREDGED MATERIAL.

44. It has been the custom for many years to dispose of material edged from Norfolk Harbor by dumping it on Willoughby Bank, large shoal extending for some miles eastward from Fort Wool cally known as the Ripraps).

45. Considerable objection has been raised in the past to the use this dumping ground by the property owners along the Willoughby each shore, and although the department has decided that the com- aints made by these people are not well-grounded, there is a more portant reason for dispensing, to some extent, with the use of the mping ground. This reason is that the amount of material which s been already dumped on this shoal is approaching its capacity.

46. There are certain portions of Norfolk Harbor where dredging necessary, and the material from which can be disposed of at any asonable price at no other place than on this dumping ground, and is important, therefore, that the still remaining capacity of the

dumping ground be reserved for material from these portions of th channel, and that, wherever it is possible, dredged material be other wise disposed of, even though the cost of so disposing of it exceed slightly the cost of towing the material to the dumping ground.

47. There are large areas along the harbor front of Norfolk whicl are low, and where reclamation is necessary, and where it woul appear that the owners would be glad to have material placed, but i has been found almost impossible in practice to come to any term with the owners of said property by which it can be used as a dumpin ground, except upon terms manifestly unfair to the United States.

48. There is, however, in Norfolk Harbor, opposite Lamberts Point an island known as Craney Island, which is owned by the War De partment, but is in temporary use now as a site for the pesthouse o the cities of Norfolk and Portsmouth. The water areas immedi ately surrounding this island are exceedingly flat and shoal, and by placing a bulkhead some distance from the shore, but still in water no exceeding about 6 feet in depth, a large dumping ground is available and the land thus reclaimed, being part of Craney Island, will pre sumably belong to the United States, and when reclaimed will be o great value to the United States for military, naval, or for other uses

49. The cost of depositing material on this island, including build ing the bulkhead, will probably exceed somewhat the cost of towing the dredged material to and depositing it at the Willoughby dump ing grounds, but this difference in cost will, it is thought, be many times less than the value of the reclaimed land, and incidentally the dumping grounds will be reserved for other and more essentia needs. The estimated increase in cost is included in the figures given above.

SUMMARY.

50. As a result of a consideration of the data obtained from the survey and in other ways, it is considered that the commercial needs of Norfolk Harbor require that the project for the improvement of the harbor be enlarged to cover the widening of the channels and the provision of anchorages to the extent named above, and that these additional improvements are fully justified by the extent and the rapidity of growth of the commerce of the locality.

51. Additional appropriations are therefore recommended as follows:

For widening the Newport News Channel to 600 feet	$270,000
For widening Norfolk Harbor Channel to the widths stated above	710,000
For a deep anchorage opposite Lamberts Point	99,000
For the 12-foot anchorage near Pinners Point	35,000
Total	1,114,000

52. It is further recommended that appropriations for this work be made under the continuing contract system, with an initial appropriation of not less than $400,000, the remainder to be provided in the two following years.

E. Eveleth Winslow,
Lieutenant Colonel, Corps of Engineers.

[For report of Board of Engineers for Rivers and Harbors on survey, see p. 4.]

WAR DEPARTMENT

CORPS OF ENGINEERS, U.S. ARMY

NORFOLK HARBOR

VIRGINIA

Scale 1: 30 000

1000 0 1 2 3 4 5000 Feet.

Contours shown thus

6' Contour

12' "

18' "

24' "

30' "

Contours are referred to Mean Low Water

NEWPORT NEWS

HAMPTON ROADS

HAMPTON FLATS

NEWPORT NEWS BAR

Channel to Newport News now 400' wide to be dredged 600' wide

NEWPORT NEWS MIDDLE GROUND

Newport News Pt

Sewall Pt

SEWALL POINT SPIT

Willoughby Spit

WILLOUGHBY BAY

Mason Creek

Tanner Pt

TANNER CREEK

CRANEY ISLAND FLATS

Channel to Norfolk now 400' wide to be dredged 600' wide

Craney I.

Lambert Point

West Norfolk

Lovett Pt

WESTERN BRANCH

Pinner Pt

Hospital Pt

NORFOLK

PORTSMOUTH

BERKLEY

U.S. Navy Yard

U.S. Engineer Office
Norfolk, Va. Dec. 15, 1913
To accompany report of this date
upon survey
Lt Col Corps of Engineers, U.S. Army

House Doc. No. 605 ; 63d Cong. 2d Sess.

WAR DEPARTMENT

CORPS OF ENGINEERS, U. S. ARMY

MILL CREEK
VIRGINIA

Surveyed in Compliance with the Requirements of Rivers and Harbors Act of July 25, 1912.

July 9-25, 1913

SCALE OF FEET

200 0 500 1000 1500

Soundings are in feet and tenths and indicate depth of mean low water

High water shore line

6 Foot contour

9 " "

10 " "

12 " "

15 " "

Bearings are observed magnetic 1913

Concrete monuments (abbreviated, con mon) used in this locality are enclosed by 4" terra cotta pipe with 1/2" brass pipe center point

Description of Station C.
Copper nail in center of ridge pole enroof of oyster house, 3'-9½" measured from facia board, on S.E end of building

Angles observed to the right
D 124° 08' 51" — N 70° 45 E.
A 195° 56' 21"
B 258° 18' 37"

DAVIS ISLAND

Grinnel's Oyster Wharf

Old Oyster Watchhouse

MILL CREEK

Fleet & Clark, Cannery

Fleets Landing

TRIANGULATION DIAGRAM
Scale of feet

Observed Magnetic Bearing

COORDINATES

LATITUDE	STA	DEPARTURE
N 2000 00	A	W 1000 00
N 592 37	A'	W 1255 26
N 2400 31	B	W 4540 36
N 5033 11	C	W 3306 61
N 5852 48	D	W 944 04

Description of Station B.
Con. mon. on brow of hill, 1000± N80°15W from Helen Hurleys house, 30 ft NW of N W cor of garden plot, 100 ft N of rail fence, 200 ft E of clump of pines, 50 ft NE. of second clump of pines

Public Landing

Public Road

Saw Mill Landing

Angles observed to the right
A' 0°-0'-0" S 60° E
C 265°-45'-55"
D 286°-49'-28"
A 357°-05'-45"

PARROT ISLAND

Description of Station D
Con mon, 75 ft back of E high water shore line and 75 ft S.E of 10" pine

Angles observed to the right
A 0°-0-0"-S 0°45 W
B 45°-20-41"
C 70°-02'-26"
Cherry Pt chimneys, round, brick, on 273°-34'-35' fish refinery

Abandoned Oyster Wharf

RAPPAHANNOCK RIVER

WIND CHART

See description below

WIND CHART DESCRIPTION
Direction and velocity of winds at Norfolk, Va. (nearest station)
Data from U.S Weather Bureau
Points of compass indicate direction from which wind blows
Figures indicate, in miles, average hourly wind velocity

Proposed location for buoy or beacon.

U.S Engr Office, Wash, D.C
Approved, October 20, 1913

Lt-Col, Corps of Engrs, U.S Army

Description of Station A
Copper nail in center of ridge pole on roof of steamboat ware house, 5'-11½") measured from facia board, on N end of building

Angles observed to the right
A' S 10°00' W 0°-0-0"
B 86°-27'-00"
C 132°-44-52"
D 170°-49-56"
Cherry Pt chimney 204°-58'-58" round brick, on fish refinery

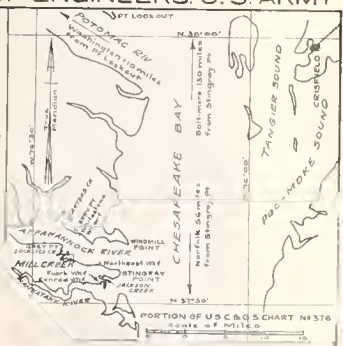
Mid Del & Va R & Wine (Mill Creek Wharf)

Description of Station A' and B.M.
Con mon, on sand shore underneath wharf 78 ft back of high water line, under W floor stringer, 11 6/12 W of W rail of track, 39 ft S of W edge of incline, 7.8 ft to W stringer of incline Elev top A B above M.L.W

Angles observed to the right B-A 70°58.45'

Results of tidal Observations during period July 9-19, 1913

Range of tide 1.5 feet
Elev of mean low water 0.0
Elev of lower low water -0.2
higher +0.4



WAR DEPARTMENT